



Pharos CPE Series

Dedicated Long-Range Outdoor
Wireless Networking Solution

Highlights

- Selectable bandwidth of 20/40/80 MHz for CPE710 and 5/10/20/40 MHz for other models
- Adjustable transmission power by 1 dBm
- Broad operating frequency channels ensure less wireless interference
- Passive PoE Adapter supports up to 60 meter¹ (200 feet) Power over Ethernet deployment
- TP-Link Pharos MAXtream² (Time-Division-Multiple-Access) technology improves product throughput, capacity and latency performance, ideal for PtMP applications.
- Centralized Management System – Pharos Control



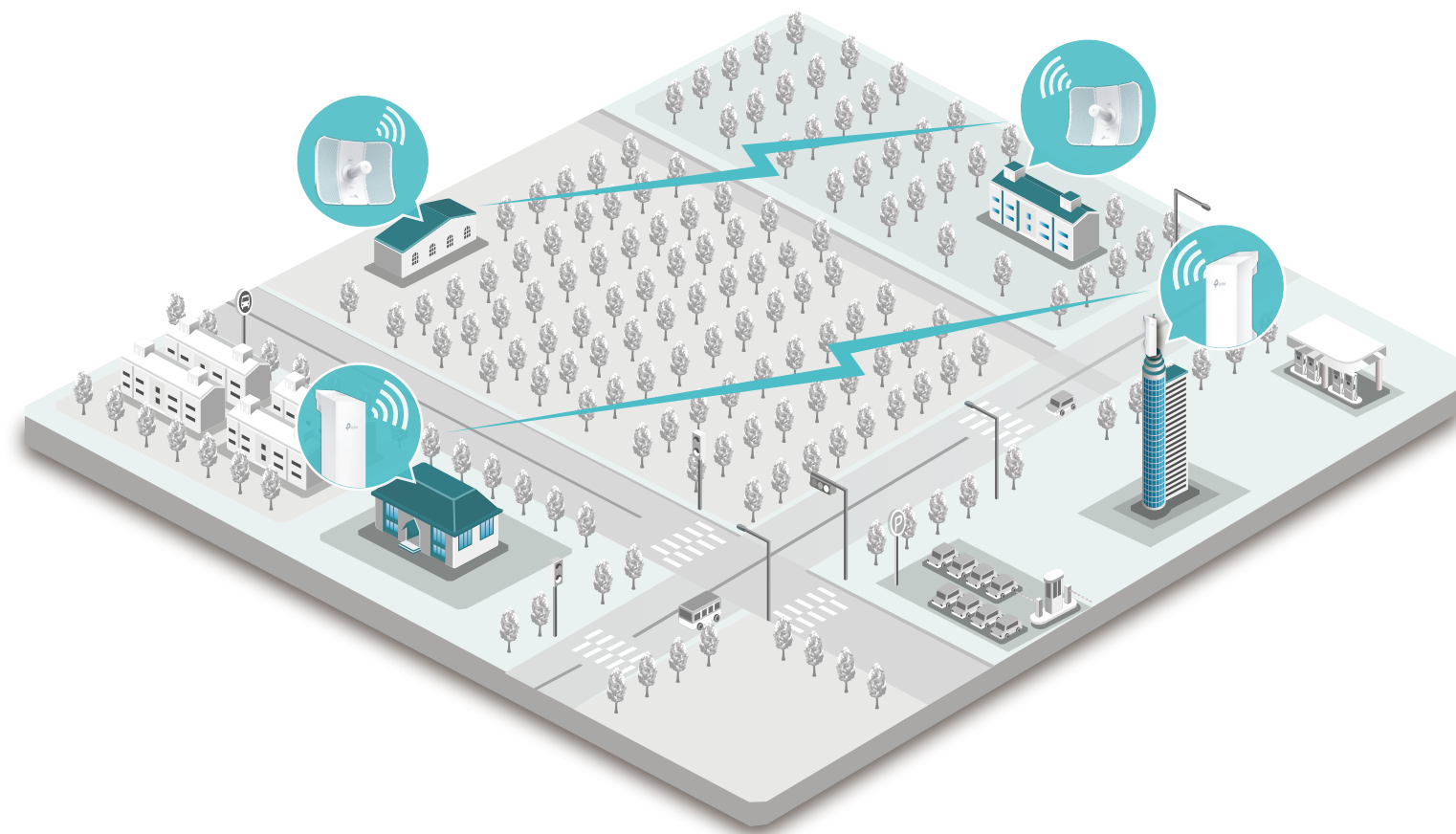
¹ Power supply distances are based on test results under normal usage conditions. Actual power supply distance will vary as a result of 1) AP status, including transmit power, connected devices and network traffic and 2) cable properties, including type and texture.

Typical Application

TP-Link's Outdoor CPE is dedicated to reliable solutions for outdoor wireless networking applications. With its centralized management application, it is flexible and ideal for Point-to-Point and Point-to-Multipoint applications.

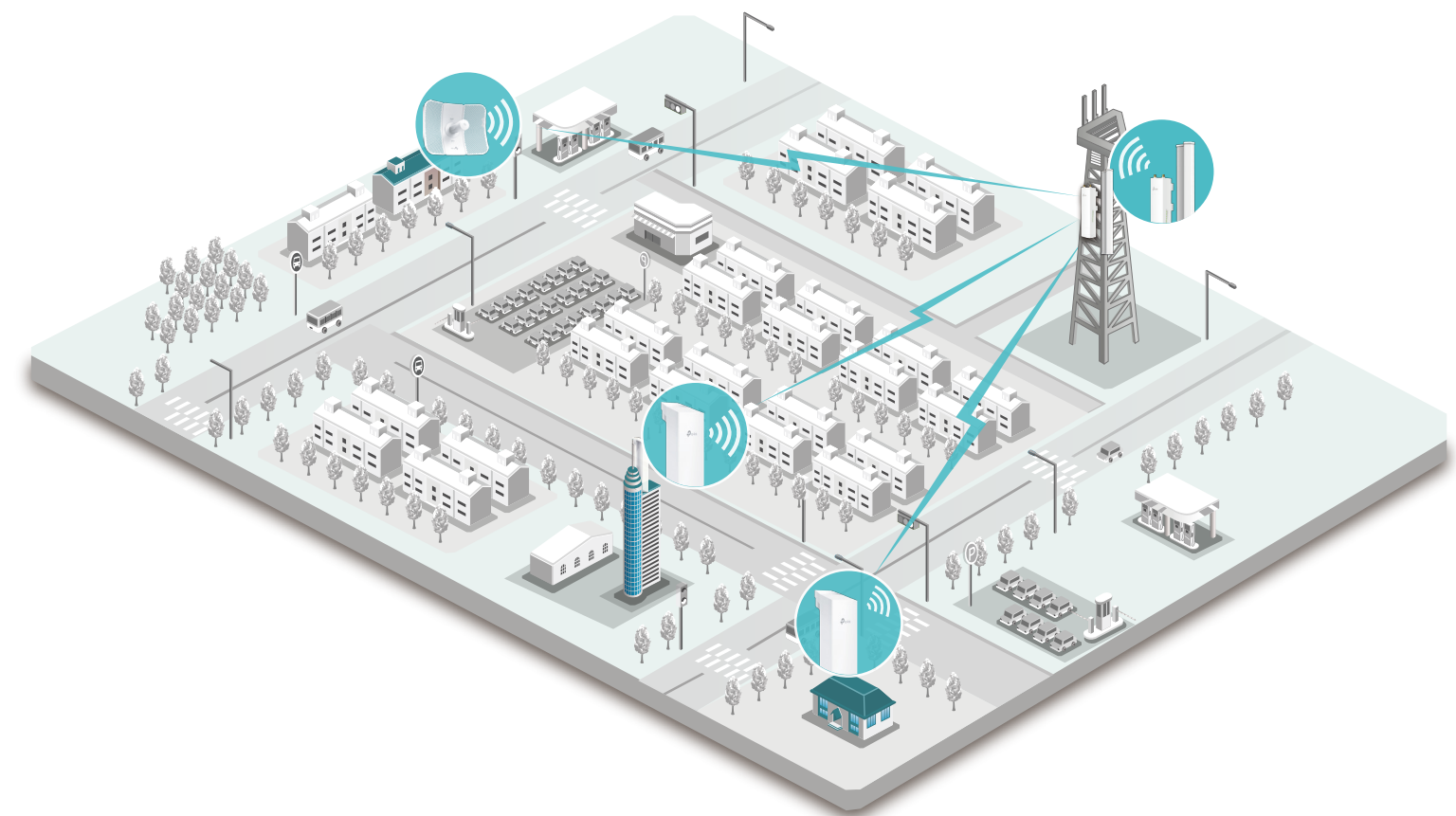
Long-distance Wireless Connection

Using two CPEs to build a long-distance Point-to-Point wireless connection.



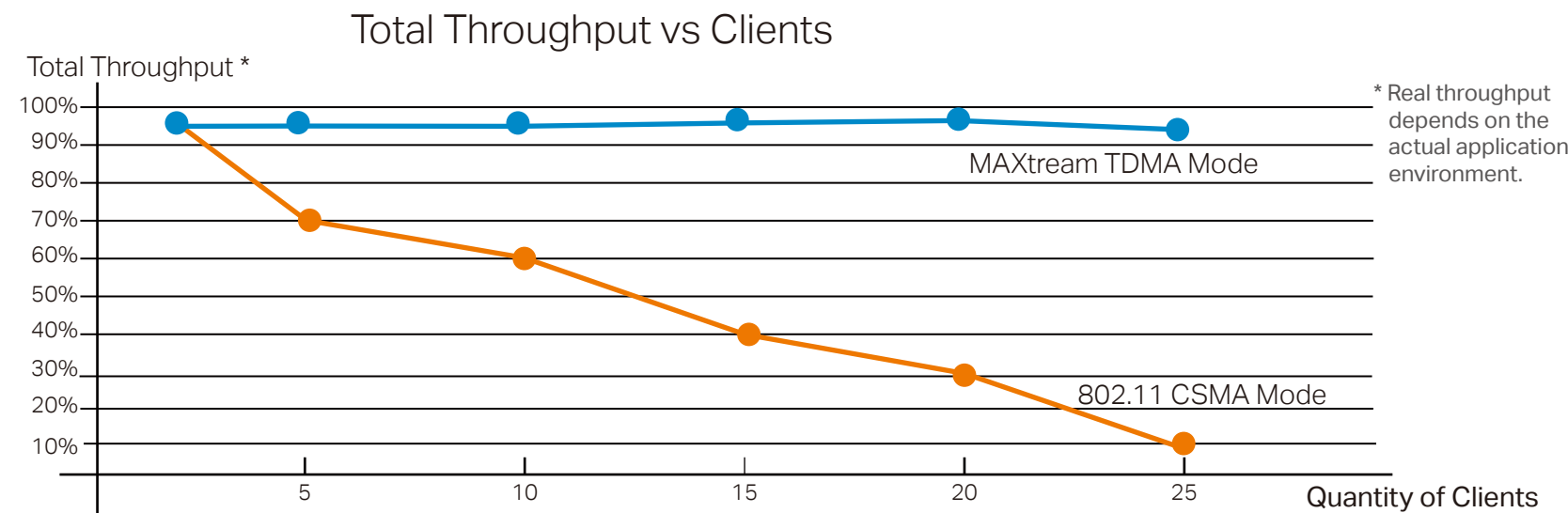
Large-area Wireless Coverage

Using Base Station combined with Sector Antenna as the Access Point at the central station, and several CPEs as client to build a Point-to-Multipoint coverage.



TP-Link MAXtream TDMA Technology

As network scale increases, wireless competition and collisions among outdoor devices will be so fierce that the real throughput of the network will drop, resulting in a serious impact on end-user experience, to mitigate these effects, TP-Link's Pharos series uses MAXtream³ TDMA Technology.



³ CPE210 / CPE220 / CPE510 / CPE605 / CPE610 supports Maxtream.

PharOS

User-friendly web-based management system allows professionals to do more specific configurations.

Wireless Signal Quality

Signal Strength: -52dBm

Noise Strength: -98dBm

SNR: 46dB

Transmit CQ: 96

Pharos Control – Centralized Management System

Pharos also comes equipped with centralized management software that helps users easily manage all the devices in their network from a single PC - Pharos Control. Functions like device discovery, status monitoring, firmware upgrading, and network maintenance can be managed using Pharos Control.

| Device name | Status | Mode | SSID | Root AP SSID | IP address |
|-------------|-----------|------|--------------|--------------|---------------|
| CPE210 | MANAGED | 0 | AMY_C2 | | 192.168.1.122 |
| CPE510 | UNMANAGED | 0 | APP_GUEST_C9 | | 192.168.1.124 |
| CPE510-2 | MANAGED | 0 | APP_842N | | 192.168.1.124 |
| CPE210-1 | UNMANAGED | 0 | RE_MONILE4 | AP500-C2 | 192.168.1.126 |
| CBS779 | MANAGED | 0 | AP500 | AP1000-SD | 192.168.1.124 |

Specification

Features & Performance

| Model | CPE210 V3.2 | CPE220 V3.0 | CPE510 V3.2 | CPE605 V1.0 | CPE610 V2.0 | CPE710 V1.0 | |
|------------------|---|--|--|---|--|---|---|
| Name | 2.4 GHz 300 Mbps 9 dBi Outdoor CPE | 2.4 GHz 300 Mbps 12 dBi Outdoor CPE | 5 GHz 300 Mbps 13 dBi Outdoor CPE | 5 GHz 150 Mbps 23 dBi Outdoor CPE | 5 GHz 300 Mbps 23 dBi Outdoor CPE | 5GHz 867Mbps 23dBi Outdoor CPE | |
| Package Contents | Outdoor CPE 24 V Passive PoE Adapter AC Power Cord Mounting Kits Quick Installation Guide | | | | | | |
| Hardware Feature | Processor | Qualcomm 650 MHz CPU, MIPS 24 Kc | | Qualcomm 560 MHz CPU, MIPS 74 Kc | | Qualcomm 750 MHz CPU, MIPS 74 Kc | |
| | Memory | 64 MB DDR2 RAM, 8 MB Flash | | | | 128 MB DDR2 RAM, 16 MB Flash | |
| | Antenna Gain | 9 dBi | 12 dBi | 13 dBi | 23 dBi | | |
| | Beamwidth | 65° (Azimuth) / 40° (Elevation) | 60° (Azimuth) / 30° (Elevation) | 45° (Azimuth) / 45° (Elevation) | 7° (Azimuth) / 10° (Elevation) | 9° (Azimuth) / 7° (Elevation) | |
| | Interfaces | 1 10/100 Mbps Shielded Ethernet Port (LAN/POE) 1 Grounding Terminal 1 Reset Button | 1 10/100 Mbps Shielded Ethernet Port (LAN0/POE) 1 10/100 Mbps Shielded Ethernet Port (LAN1) 1 Grounding Terminal 1 Reset Button | 1 10/100 Mbps Shielded Ethernet Port (LAN/POE) 1 Grounding Terminal 1 Reset Button | 1 10/100 Mbps Shielded Ethernet Port (LAN/POE) 1 Reset Button | | 1 10/100/1000 Mbps Shielded Ethernet Port (LAN/POE) 1 Reset Button |
| | Power Supply | 24 VDC / 0.25 A Passive PoE (+4,5 pins; -7,8 pins) | 24 VDC / 0.5 A Passive PoE (+4,5 pins; -7,8 pins) | | 24 VDC / 0.25 A Passive PoE (+4,5 pins; -7,8 pins) | 24 VDC / 0.5 A Passive PoE (+4,5 pins; -7,8 pins) | |
| | Dimensions (L x W x H) | 224 x 79 x 60 mm | 276 x 79 x 60 mm | 224 x 79 x 60 mm | 207 x 255 x 350 mm | 207 x 280 x 366 mm | |
| | Protection ⁴ | 15 kV ESD Protection 6 kV Lightning Protection | | | | | |
| Enclosure | Material: Outdoor ASA stabilized plastic Weatherproof: IPX5 water and dust proof design | | | Material: Outdoor PC stabilized plastic Weatherproof: IP65 water and dust proof design | | | |

⁴Protection against lightning and electro-static discharge may be achieved through proper product setup, grounding and cable shielding. Refer to the instruction manual and consult an IT professional to assist with setting up this product.

Specification

Features & Performance

| Model | | CPE210 V3.2 | CPE220 V3.0 | CPE510 V3.2 | CPE605 V1.0 | CPE610 V2.0 | CPE710 V1.0 | |
|-------------------|-------------------------------------|--|---------------------------------------|---------------------------------------|---|---------------------------------------|---|--|
| Name | | 2.4 GHz 300 Mbps 9 dBi Outdoor CPE | 2.4 GHz 300 Mbps 12 dBi Outdoor CPE | 5 GHz 300 Mbps 13 dBi Outdoor CPE | 5 GHz 150 Mbps 23 dBi Outdoor CPE | 5 GHz 300 Mbps 23 dBi Outdoor CPE | 5GHz 867Mbps 23dBi Outdoor CPE | |
| Wireless Features | Wireless Standards | IEEE 802.11 b/g/n | | IEEE 802.11a/n | | IEEE 802.11a/n/ac | | |
| | Proprietary Protocol | TDMA Mode (with Pharos MAXtream enabled) | | | | | / | |
| | Frequency ⁵ | 2.4-2.483 GHz | | 5.15-5.85 GHz | | | | |
| | Wireless Speed ⁶ | Up to 300 Mbps (40 MHz, Dynamic) Up to 144.4 Mbps (20 MHz, Dynamic) Up to 72.2 Mbps (10 MHz, Dynamic) Up to 36.1 Mbps (5 MHz, Dynamic) | | | Up to 150 Mbps (40 MHz, Dynamic) Up to 72.2 Mbps (20 MHz, Dynamic) Up to 36.1 Mbps (10 MHz, Dynamic) Up to 18.05 Mbps (5 MHz, Dynamic) | | Up to 300 Mbps (40 MHz, Dynamic) Up to 144.4 Mbps (20 MHz, Dynamic) Up to 72.2 Mbps (10 MHz, Dynamic) Up to 36.1 Mbps (5 MHz, Dynamic) | |
| | Maximum Transmit Power ⁷ | 25 dBm (Adjustable power by 1 dBm) | 30 dBm (Adjustable power by 1 dBm) | 26 dBm (Adjustable power by 1 dBm) | 23 dBm (Adjustable power by 1 dBm) | 25 dBm (Adjustable power by 1 dBm) | 27 dBm (Adjustable power by 1 dBm) | |
| Software Feature | Operation Mode | AP / Client / AP Router / AP Client Router (WISP Client) | | | | | | |
| | Network Configurations | WAN: Static / Dynamic / PPPoE / L2TP / PPTP (CPE210 / CPE220 / CPE510 / CPE605 / CPE610 supports L2TP / PPTP) LAN: Static / Dynamic / DHCP IPv6 Forwarding: ALG / UPnP / Virtual Server / Port Trigger Security: SPI Firewall / Ping Forbidden / DoS Protection Access Control Static Routing Bandwidth Control IP & MAC Binding | | | | | | |

⁵ Available operating frequency may vary depending on the limitation of the countries or regions in which the device is used.

⁶ Maximum wireless transmission rates are the physical rates derived from IEEE Standard 802.11 specifications. Actual wireless transmission rate will vary as a result of:

- 1) environmental factors, including building materials, physical objects and obstacles,
- 2) network conditions, including local interference, volume and density of traffic, product location, network complexity, and network overhead and
- 3) client limitations, including rated performance, location, connection quality, and client condition.

⁷ Maximum transmit power is limited by local regulatory settings.

Specification

Features & Performance

| Model | CPE210 V3.2 | CPE220 V3.0 | CPE510 V3.2 | CPE605 V1.0 | CPE610 V2.0 | CPE710 V1.0 |
|------------------|---|---|-----------------------------------|-----------------------------------|-----------------------------------|--------------------------------|
| Name | 2.4 GHz 300 Mbps 9 dBi/12 dBi Outdoor CPE | | 5 GHz 300 Mbps 13 dBi Outdoor CPE | 5 GHz 150 Mbps 23 dBi Outdoor CPE | 5 GHz 300 Mbps 23 dBi Outdoor CPE | 5GHz 867Mbps 23dBi Outdoor CPE |
| Software Feature | Wireless Configurations | Pharos MAXtream TDMA Technology (CPE210 / CPE220 / CPE510 / CPE605 / CPE610 supports Maxtream.) Long Range PtP Selectable Channel Width: 20/40/80 MHz for CPE710, 5/10/20/40 MHz for other models Auto Channel Selection Transmit Power Control Dynamic Frequency Selection (DFS) (CPE510 / CPE605 / CPE610 / CPE710 supports DFS.) WDS Enable/Disable Security: WPA / WPA2, WPA-PSK / WPA2-PSK (AES / TKIP) Encryption SSID Broadcast Enable/Disable Multi-SSID with VLAN Tagging (AP mode only) Distance / ACK Timeout Setting Wireless MAC Address Filter Wireless Advanced: Beacon Inteval / RTS Threshold / Fragmentation Threshold / DTIM Inteval / AP Isolation / Short GI / Wi-Fi Multimedia | | | | |
| | Management | Discovery and Remote Management via Pharos Control application HTTP / HTTPS Web-based management System Log SNMP Agent (v2c) Ping Watch Dog Dynamic DDNS SSH Server | | | | |
| | System Tools | Indicators: Signal Strength / Noise / Transmit CCQ / CPU / Memory Monitors: Throughput / Stations / Interfaces / ARP / Routes / WAN / DHCP Spectrum Analysis Speed Test Ping Traceroute Antenna Alignment | | | | |

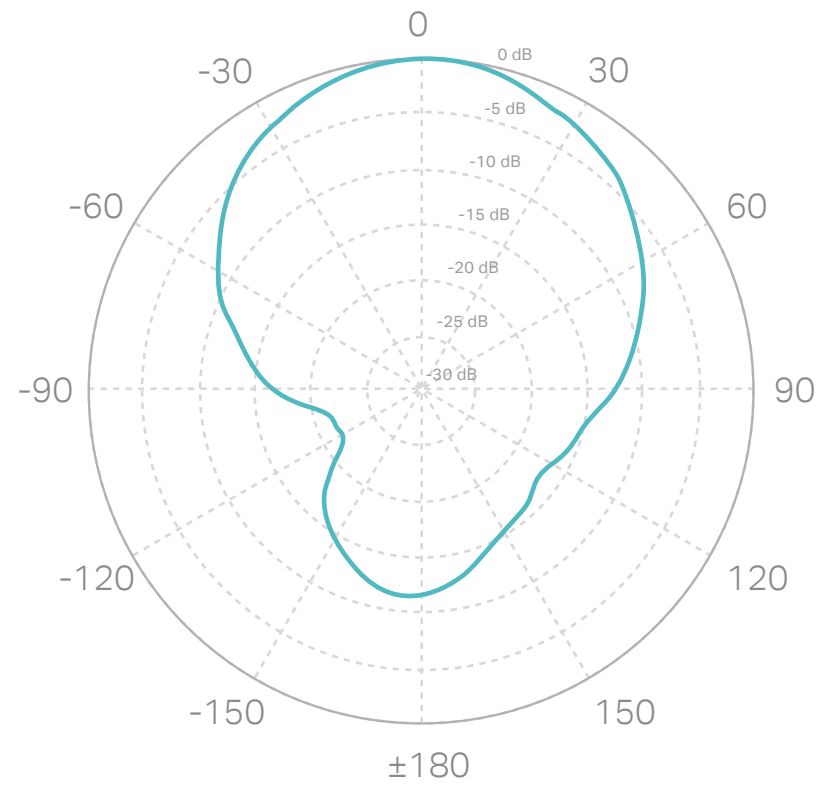
Specification

Features & Performance

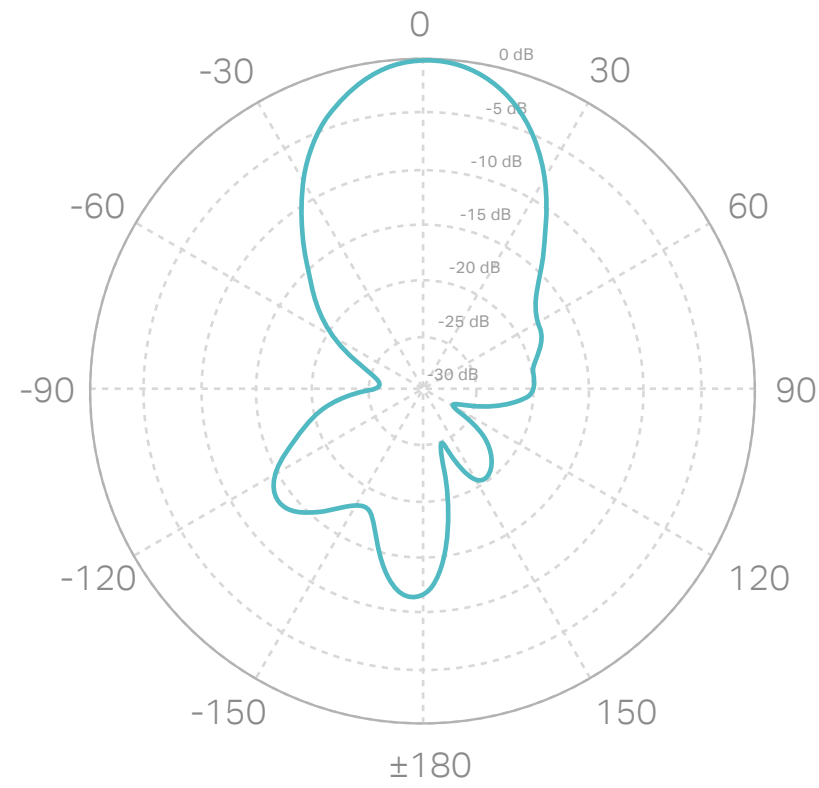
| Model | | CPE210 V3.2 | CPE220 V3.0 | CPE510 V3.2 | CPE605 V1.0 | CPE610 V2.0 | CPE710 V1.0 |
|------------------|----------------------------|--|-------------|-----------------------------------|-----------------------------------|-----------------------------------|--------------------------------|
| Name | | 2.4 GHz 300 Mbps 9 dBi / 12 dBi Outdoor CPE | | 5 GHz 300 Mbps 13 dBi Outdoor CPE | 5 GHz 150 Mbps 23 dBi Outdoor CPE | 5 GHz 300 Mbps 23 dBi Outdoor CPE | 5GHz 867Mbps 23dBi Outdoor CPE |
| Software Feature | System-level Optimizations | IGMP Snooping / Proxy for multicast applications | | | | | |
| | System Requirements | Microsoft Windows 98SE, NT, 2000, XP, Vista™ or Windows 10, Windows 8, Windows 7, MAC OS, NetWare, UNIX or Linux. Note: We recommend you to use one of following Web browsers for better experience: Google Chrome, Safari, Firefox. IE browsers are not recommended. | | | | | |
| Others | Certification | CE, FCC, RoHS, IPX5 | | | CE, FCC, RoHS, IP65 | CE, FCC, RoHS, IP65, IC | |
| | Environment | Operating Temperature: -40 °C~70 °C (-40 °F~158 °F) Storage Temperature: -40 °C~70 °C (-40 °F~158 °F) Operating Humidity: 10%~90% non-condensing Storage Humidity: 5%~95% non-condensing | | | | | |

CPE210 Antenna Patterns

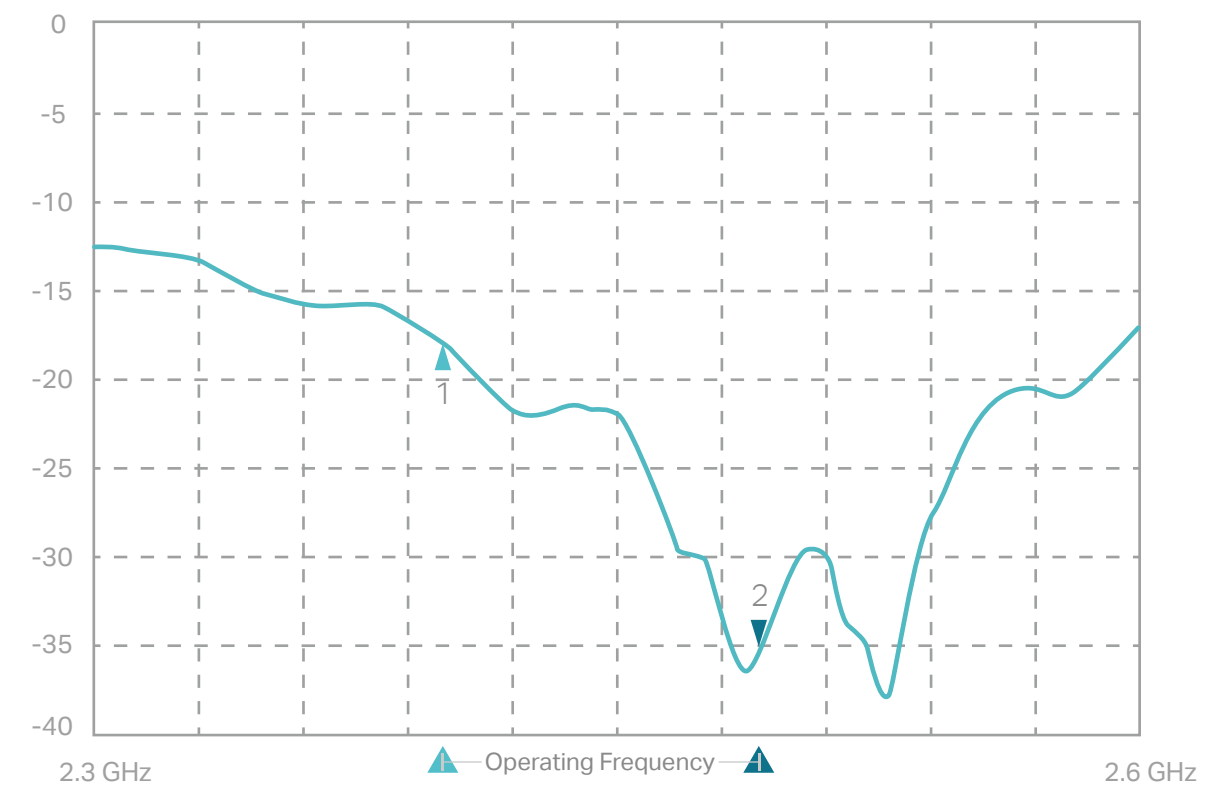
Vertical Azimuth



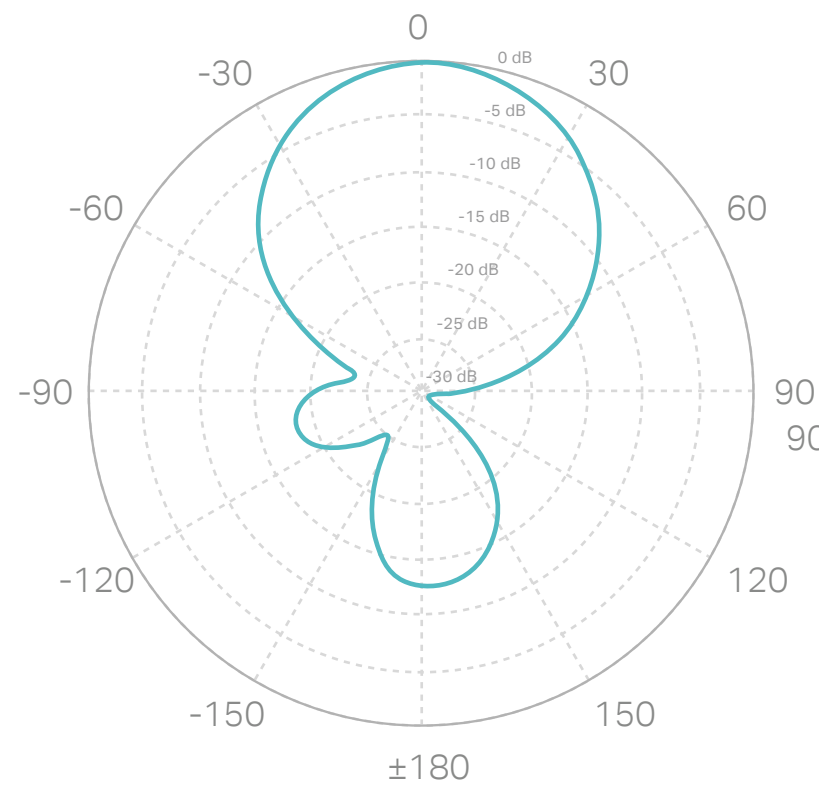
Vertical Elevation



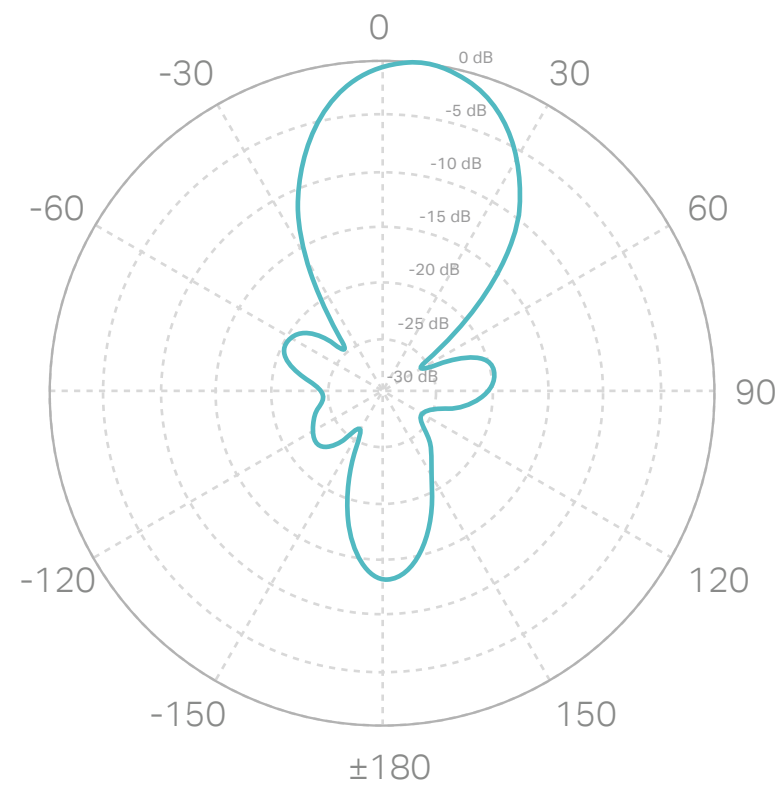
Return Loss – Vertical Polarization



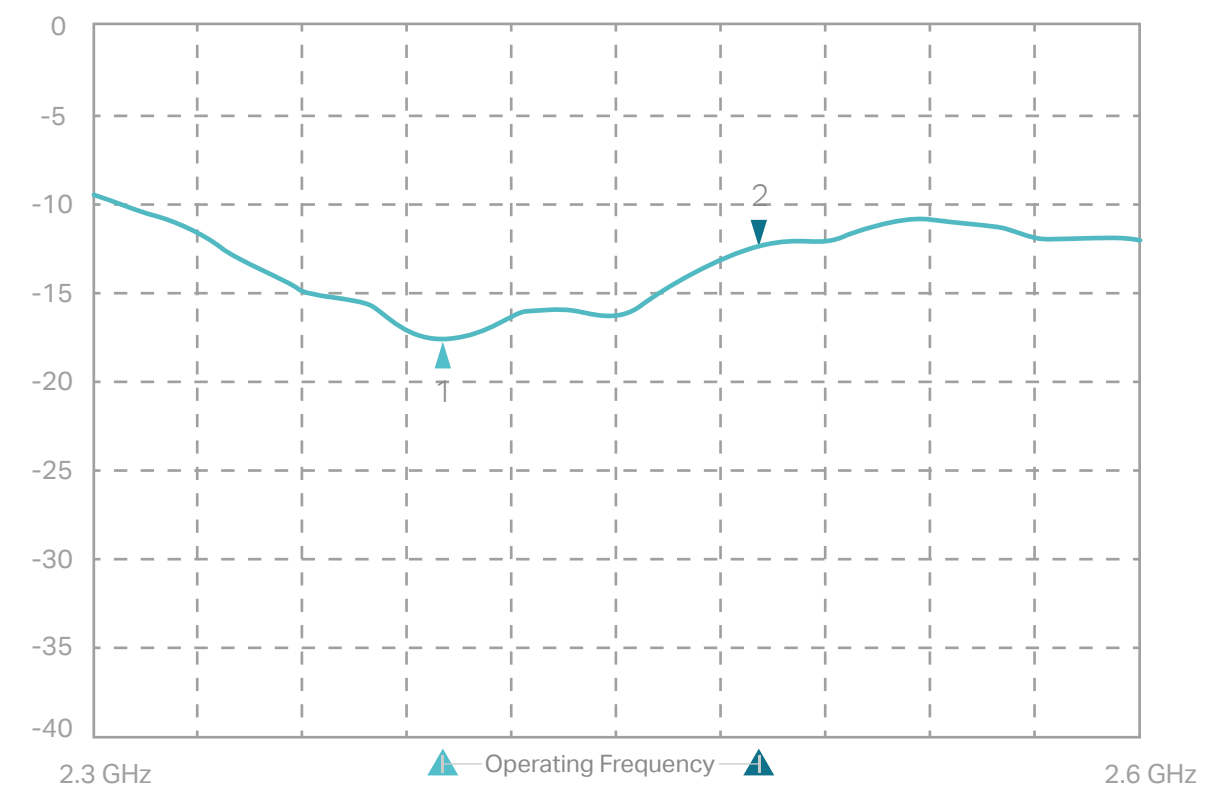
Horizontal Azimuth



Horizontal Elevation

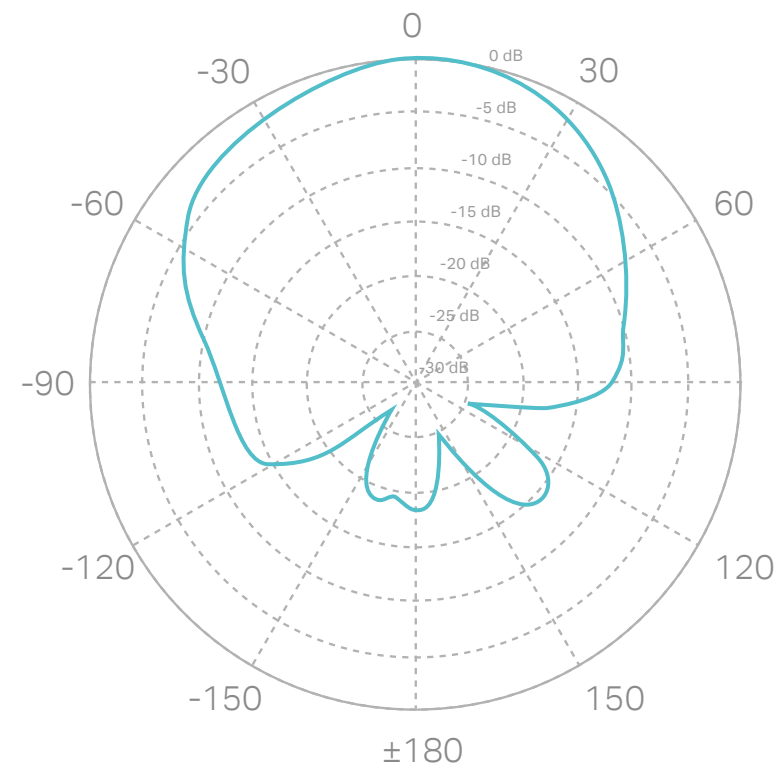


Return Loss – Horizontal Polarization

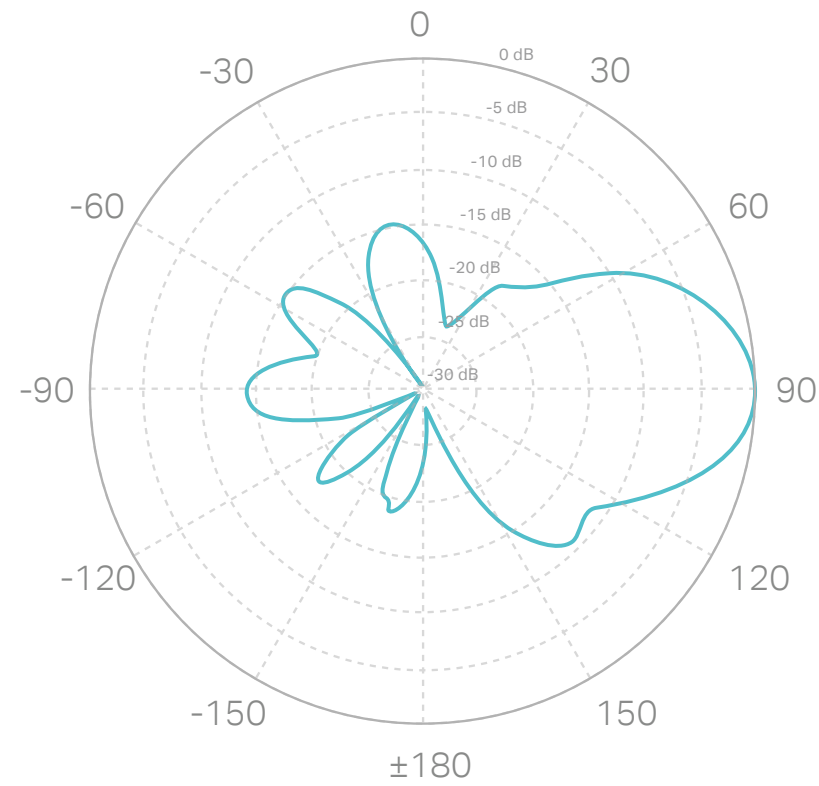


CPE220 Antenna Patterns

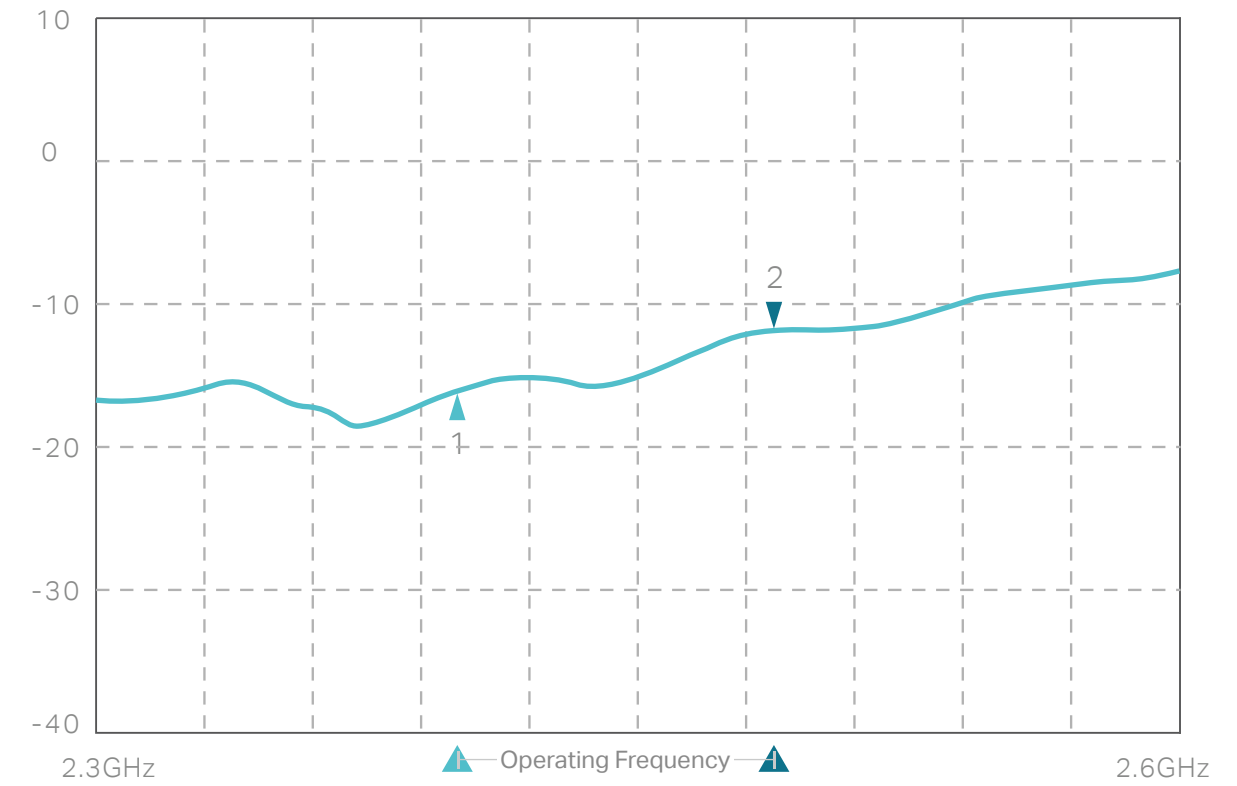
Vertical Azimuth



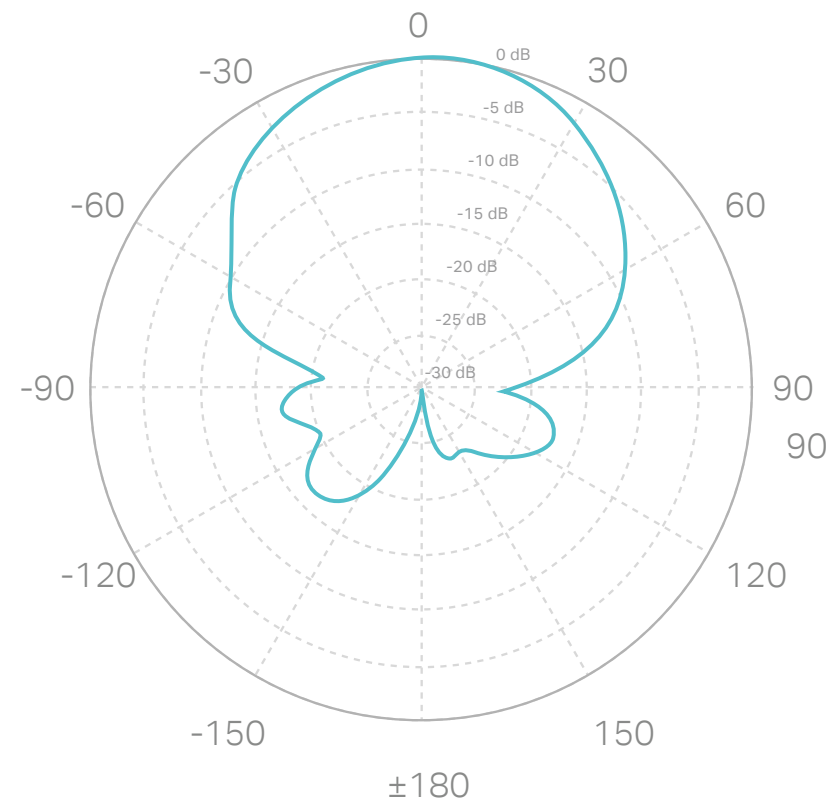
Vertical Elevation



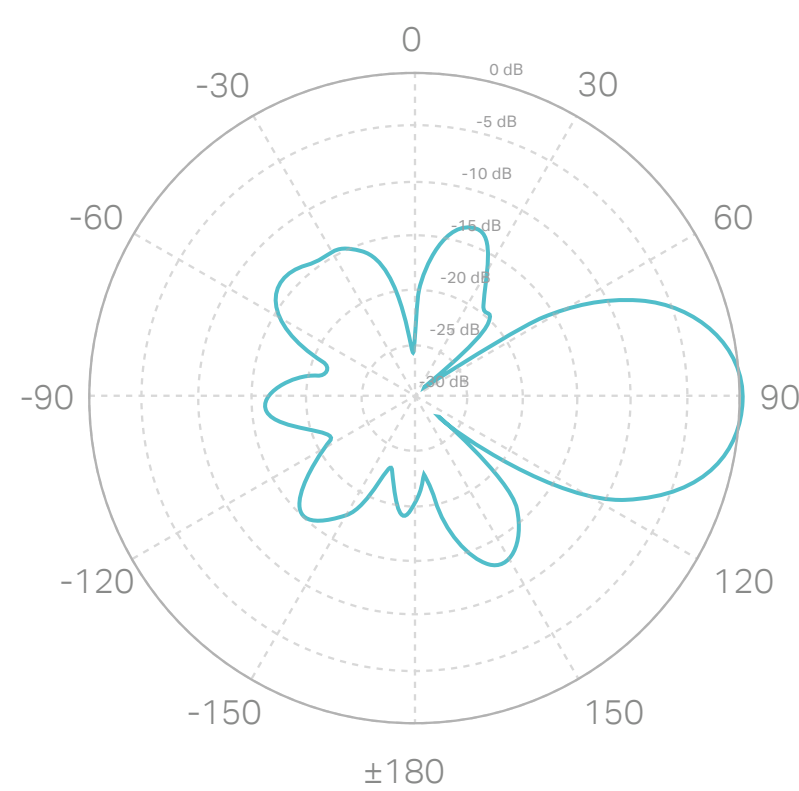
Return Loss – Vertical Polarization



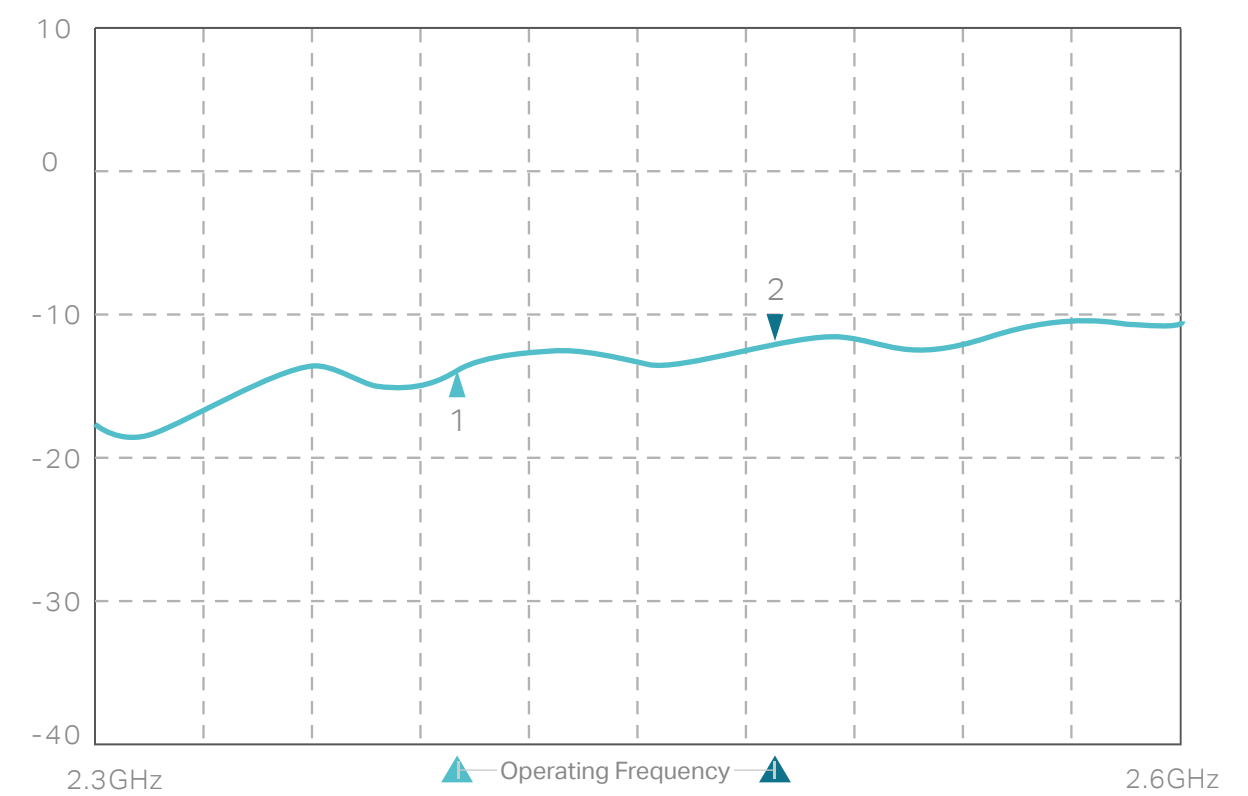
Horizontal Azimuth



Horizontal Elevation

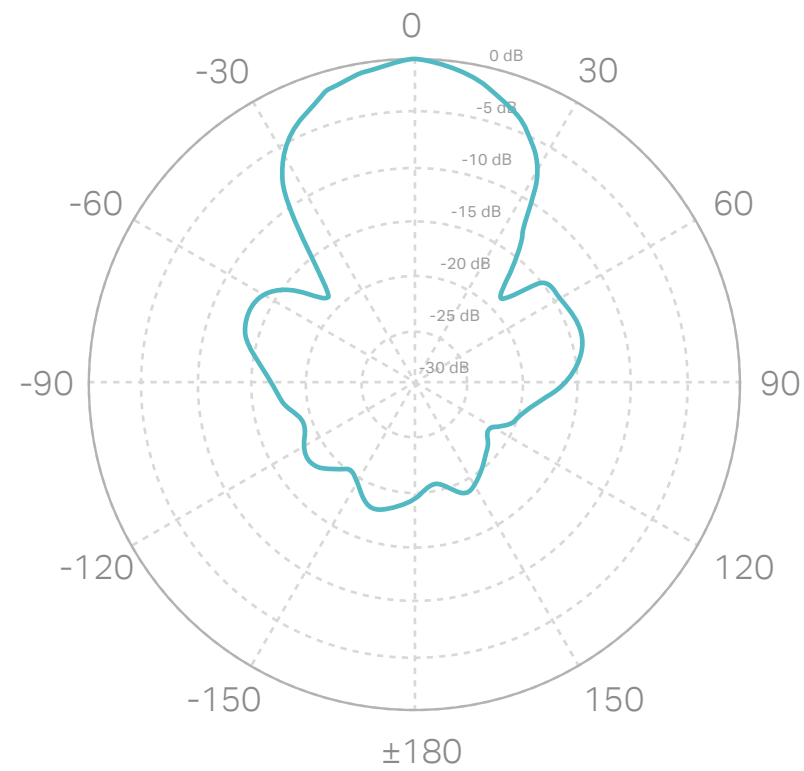


Return Loss – Horizontal Polarization

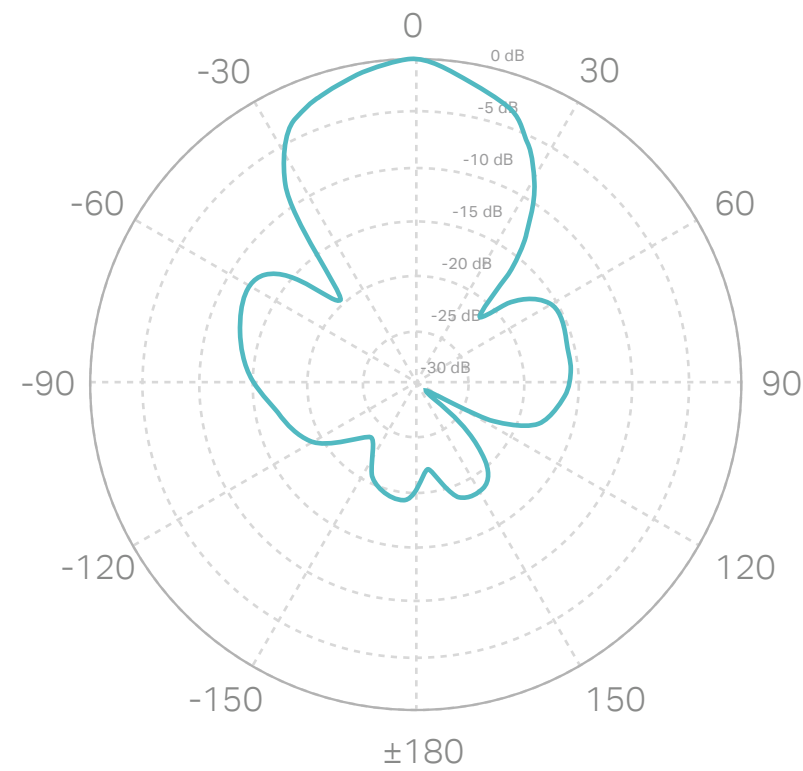


CPE510 Antenna Patterns

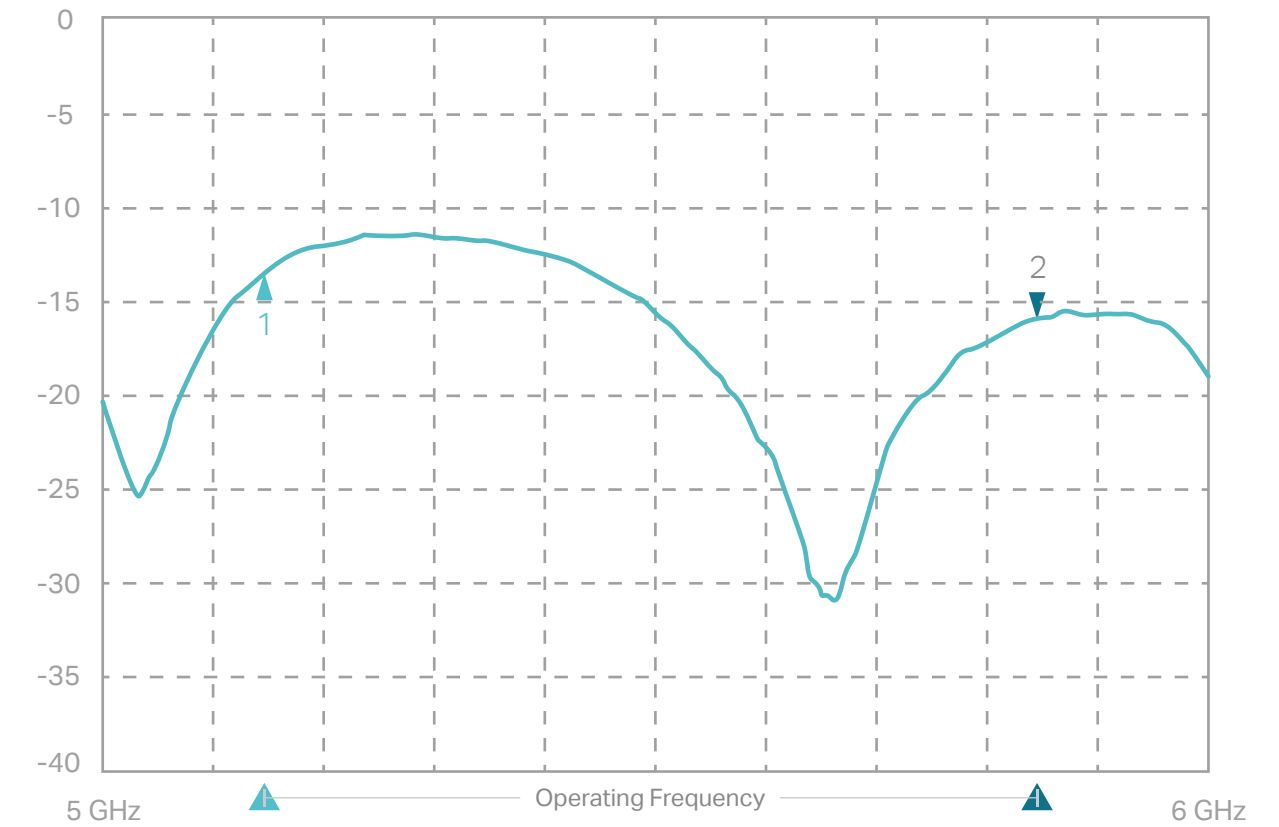
Vertical Azimuth



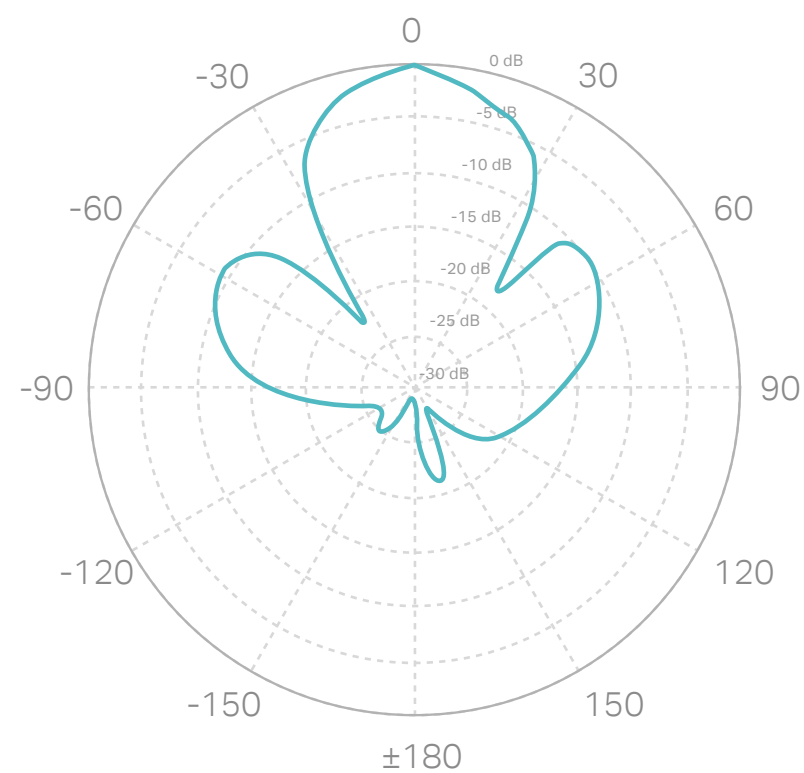
Vertical Elevation



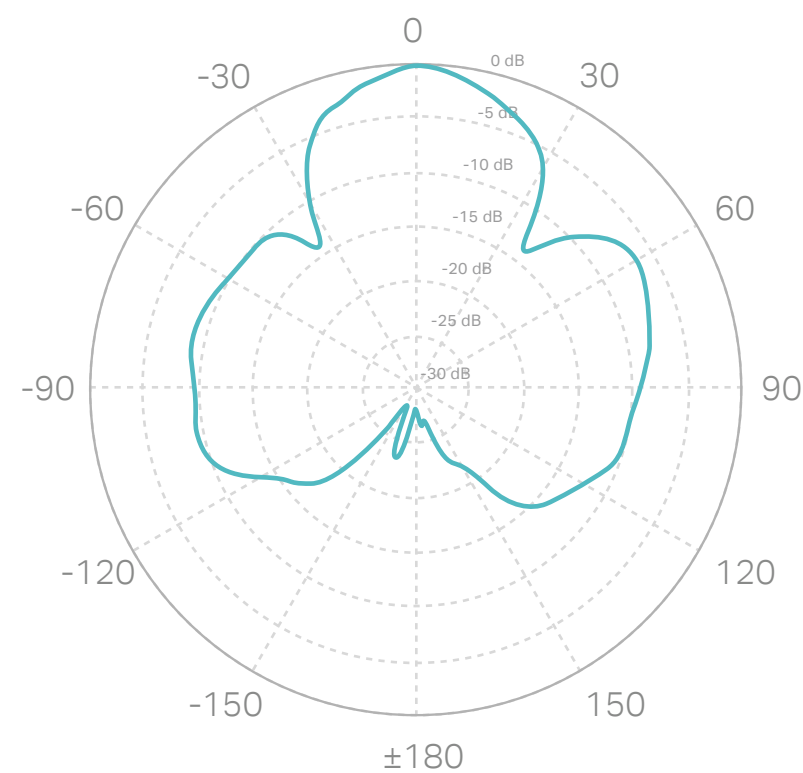
Return Loss – Vertical Polarization



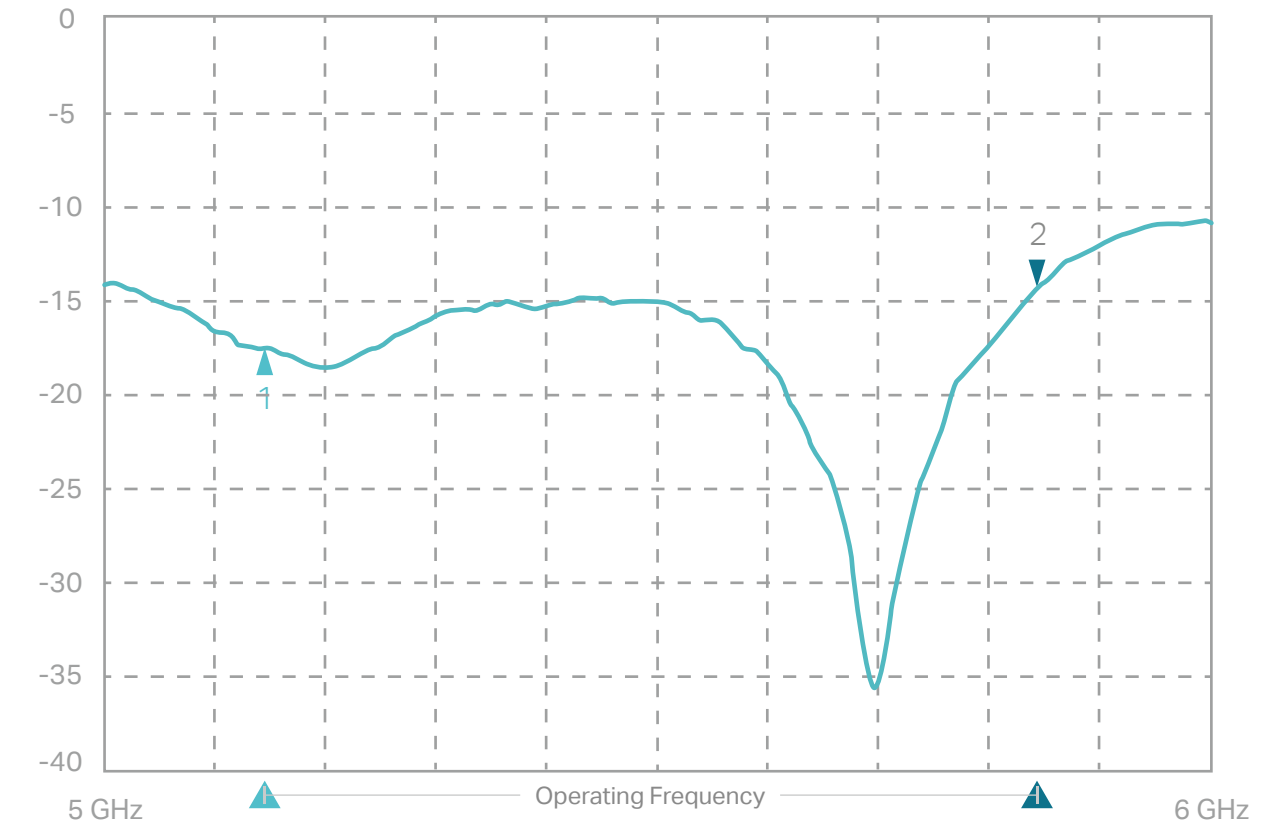
Horizontal Azimuth



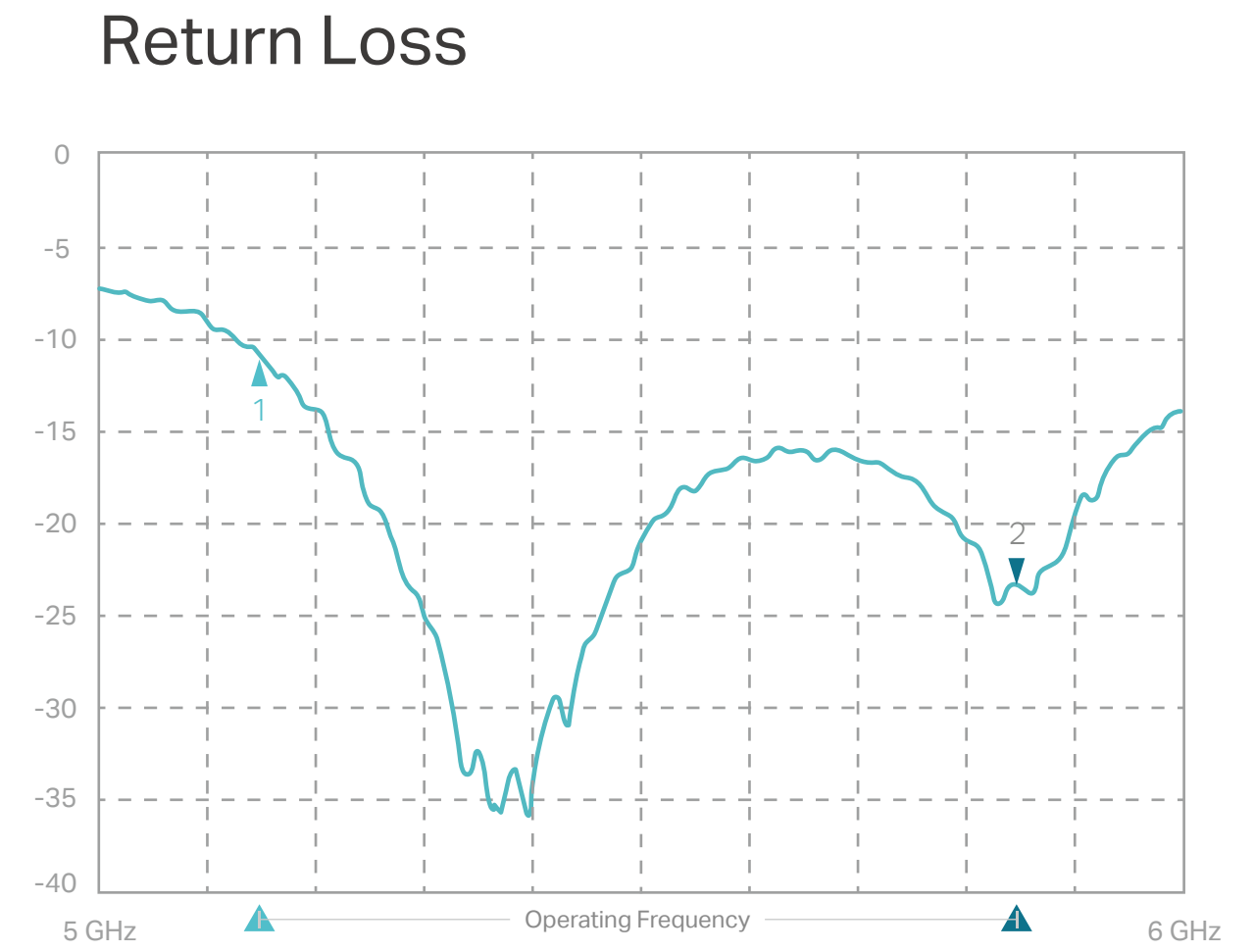
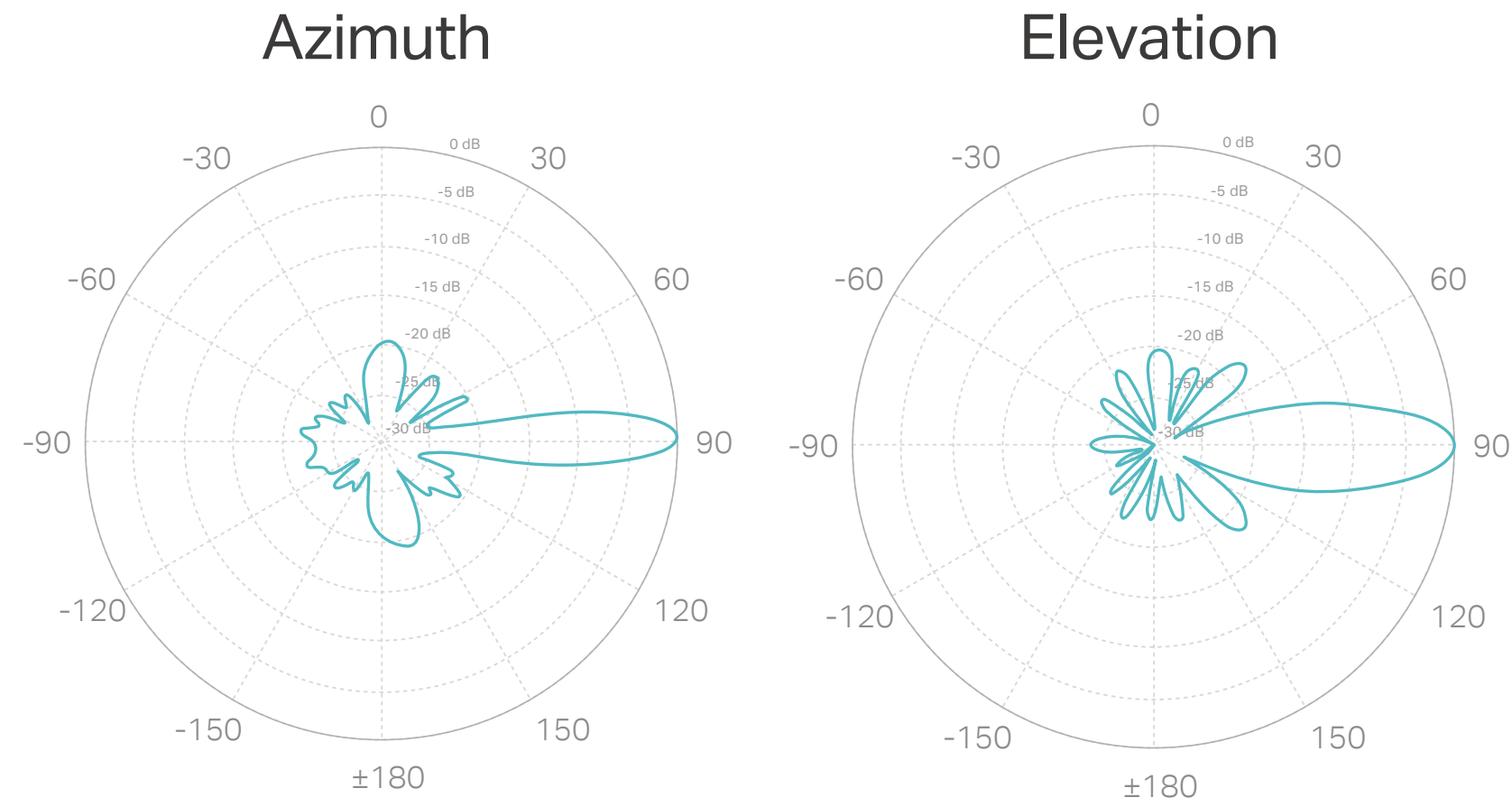
Horizontal Elevation



Return Loss – Horizontal Polarization

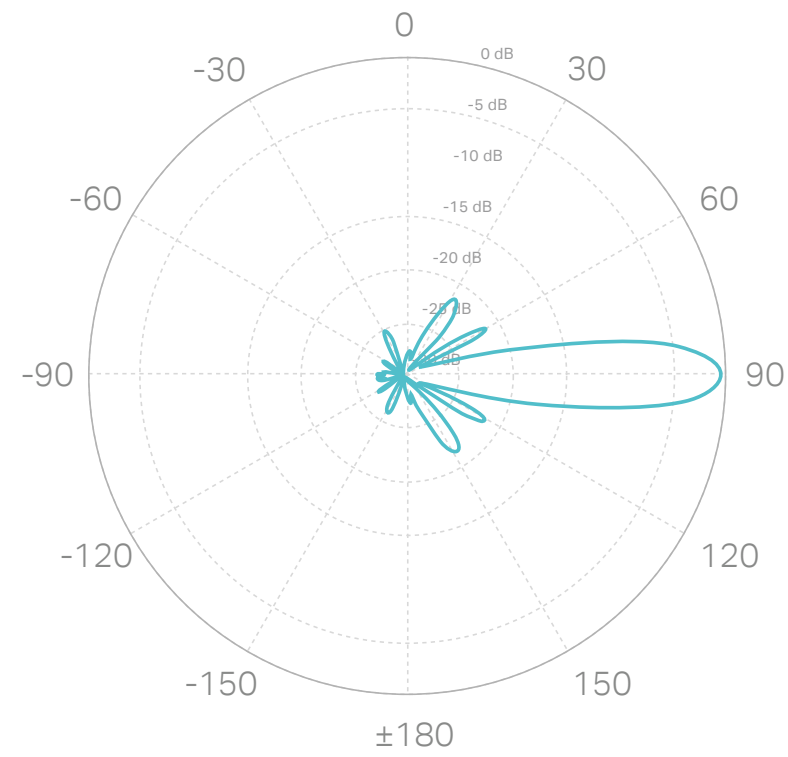


CPE605 Antenna Patterns

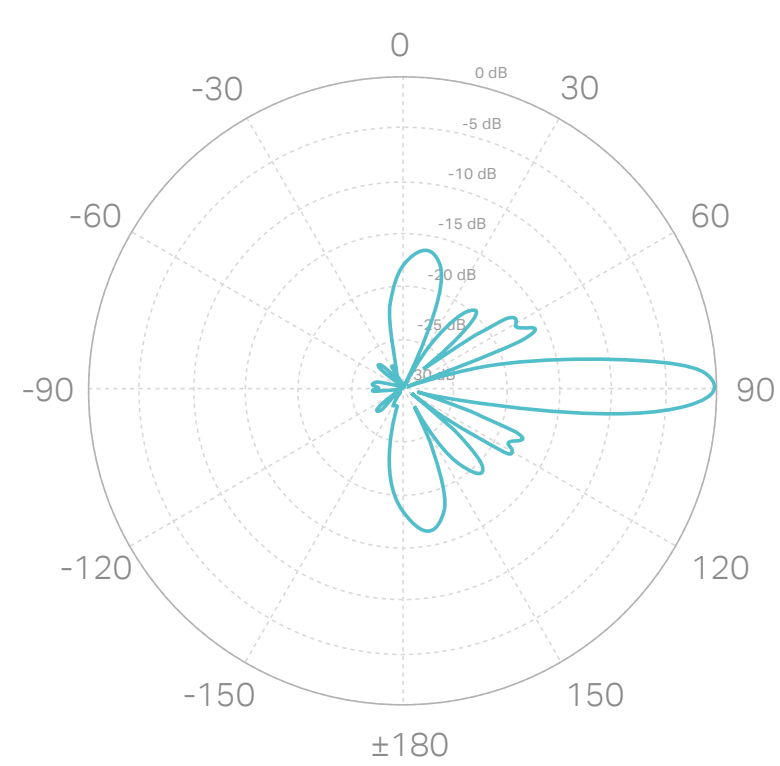


CPE610 Antenna Patterns

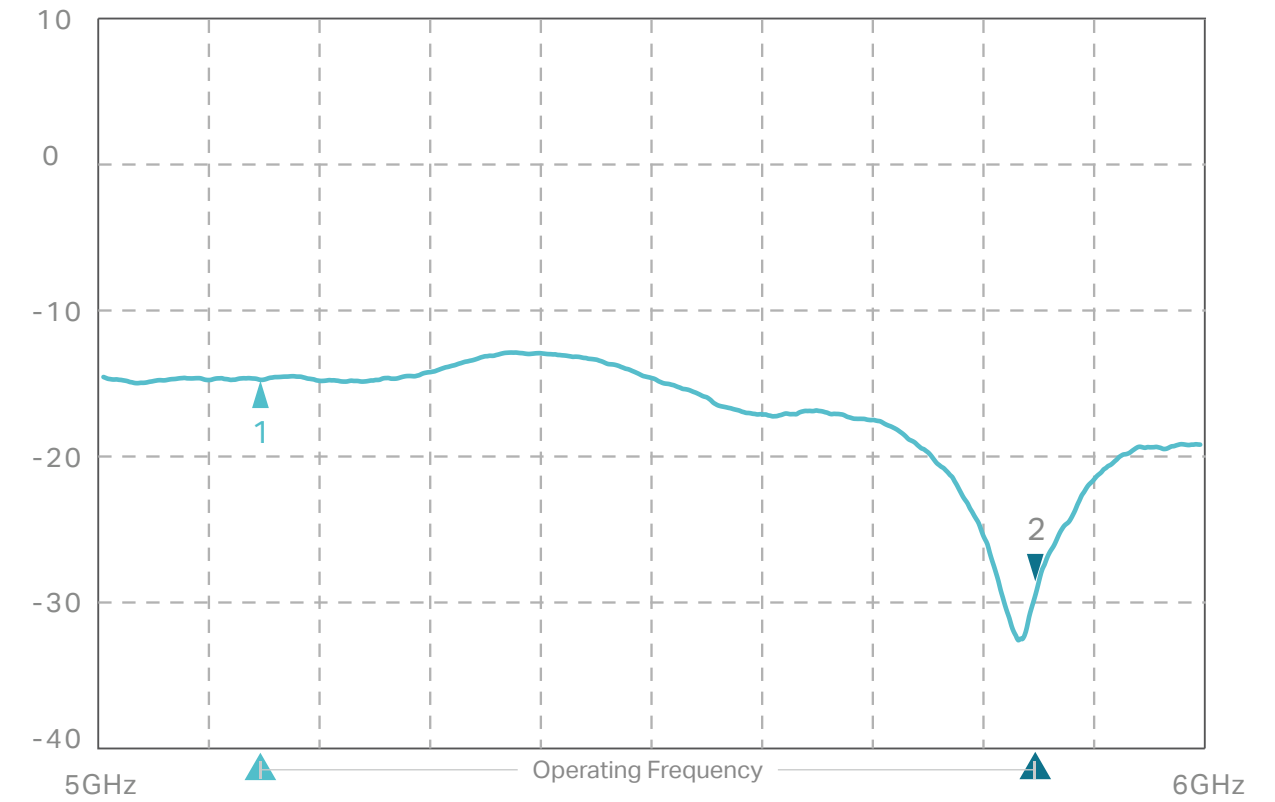
Vertical Azimuth



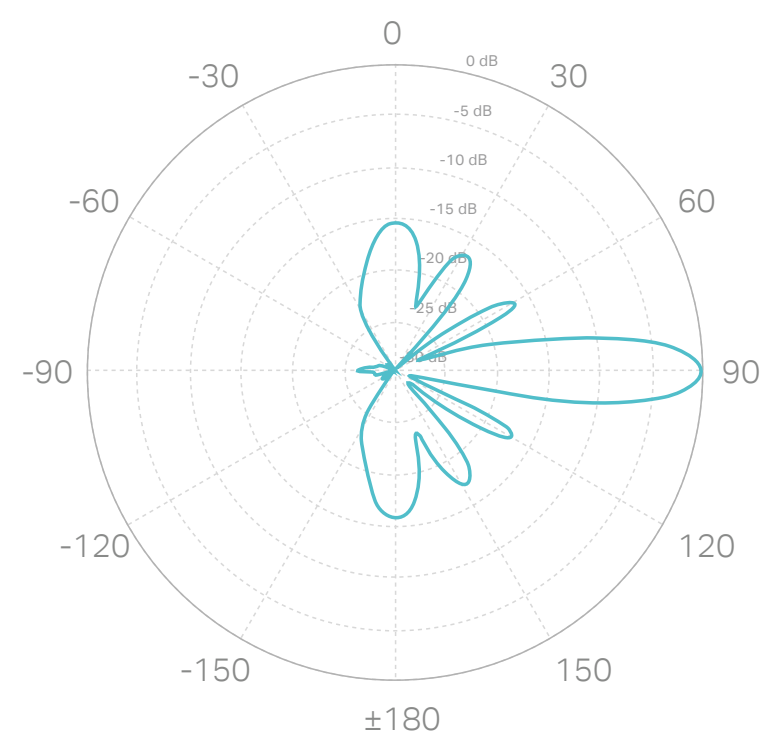
Vertical Elevation



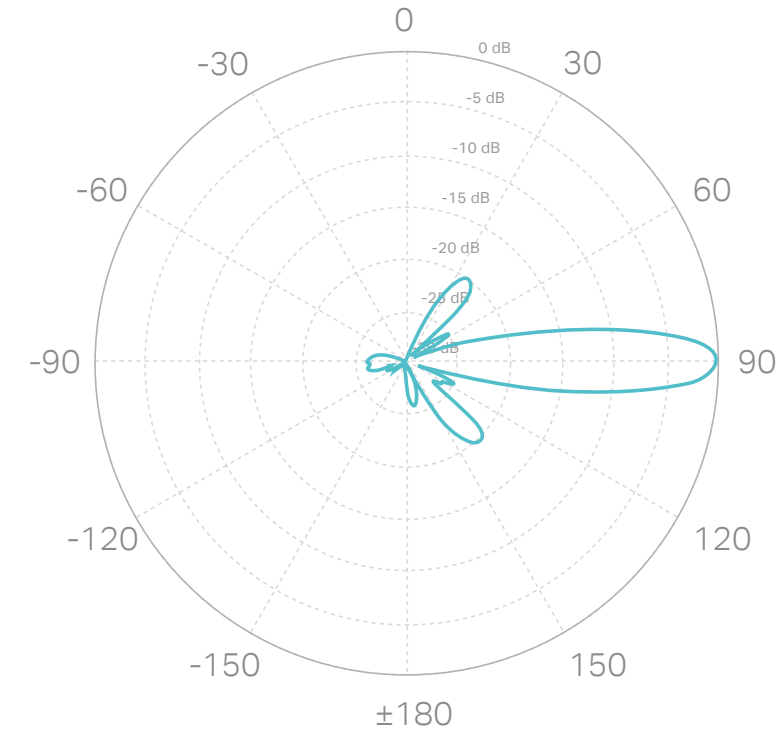
Return Loss – Vertical Polarization



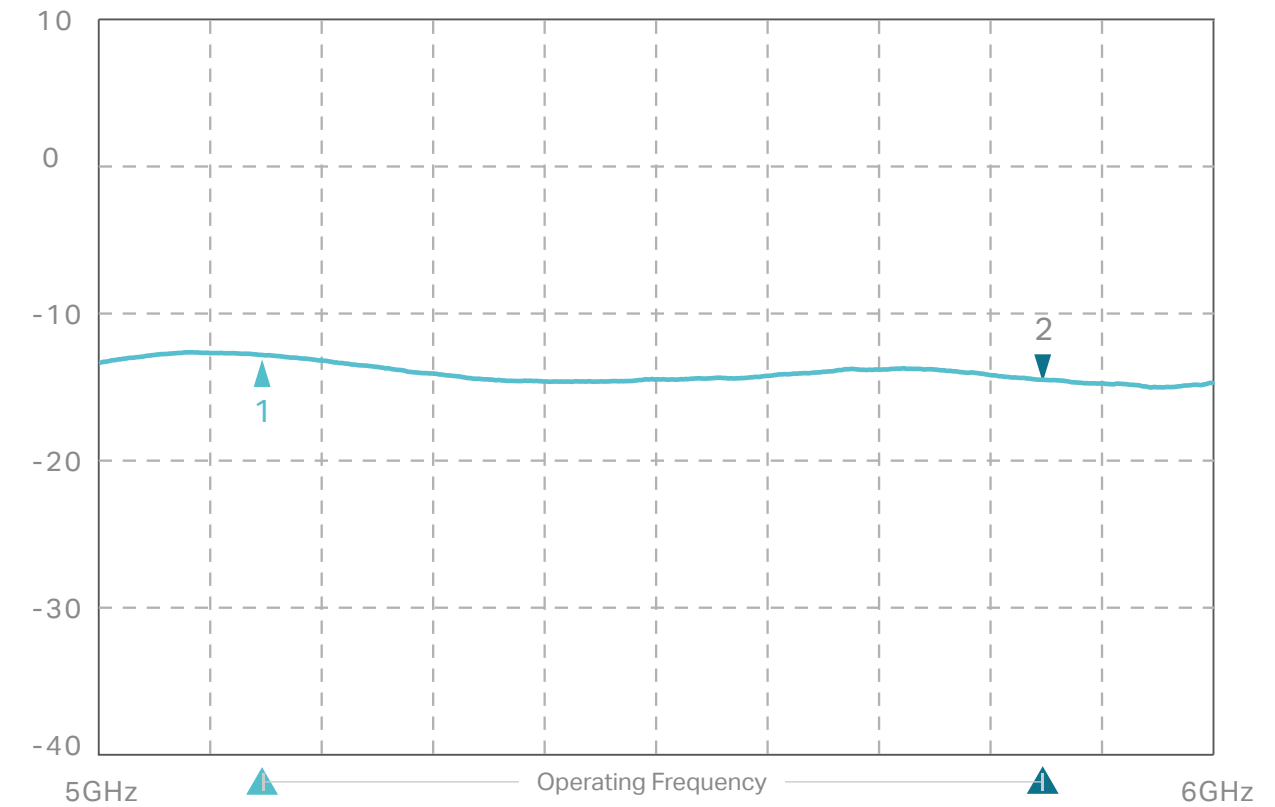
Horizontal Azimuth



Horizontal Elevation

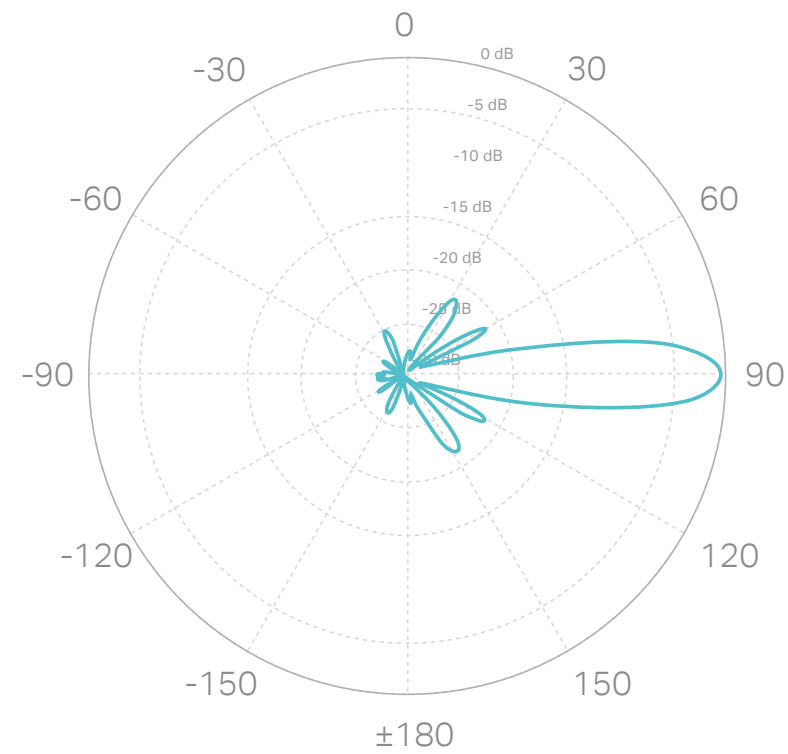


Return Loss – Horizontal Polarization

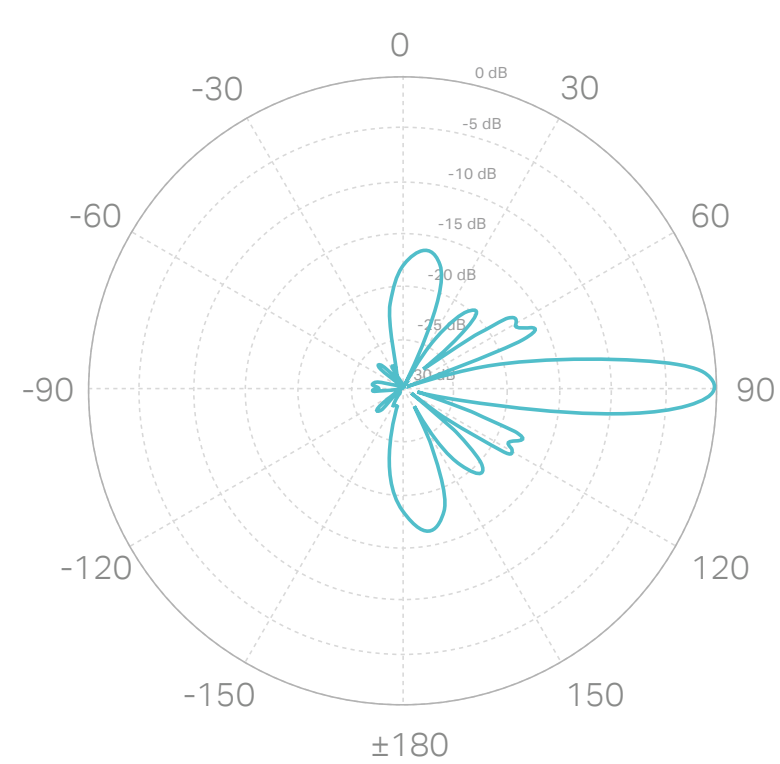


CPE710 Antenna Patterns

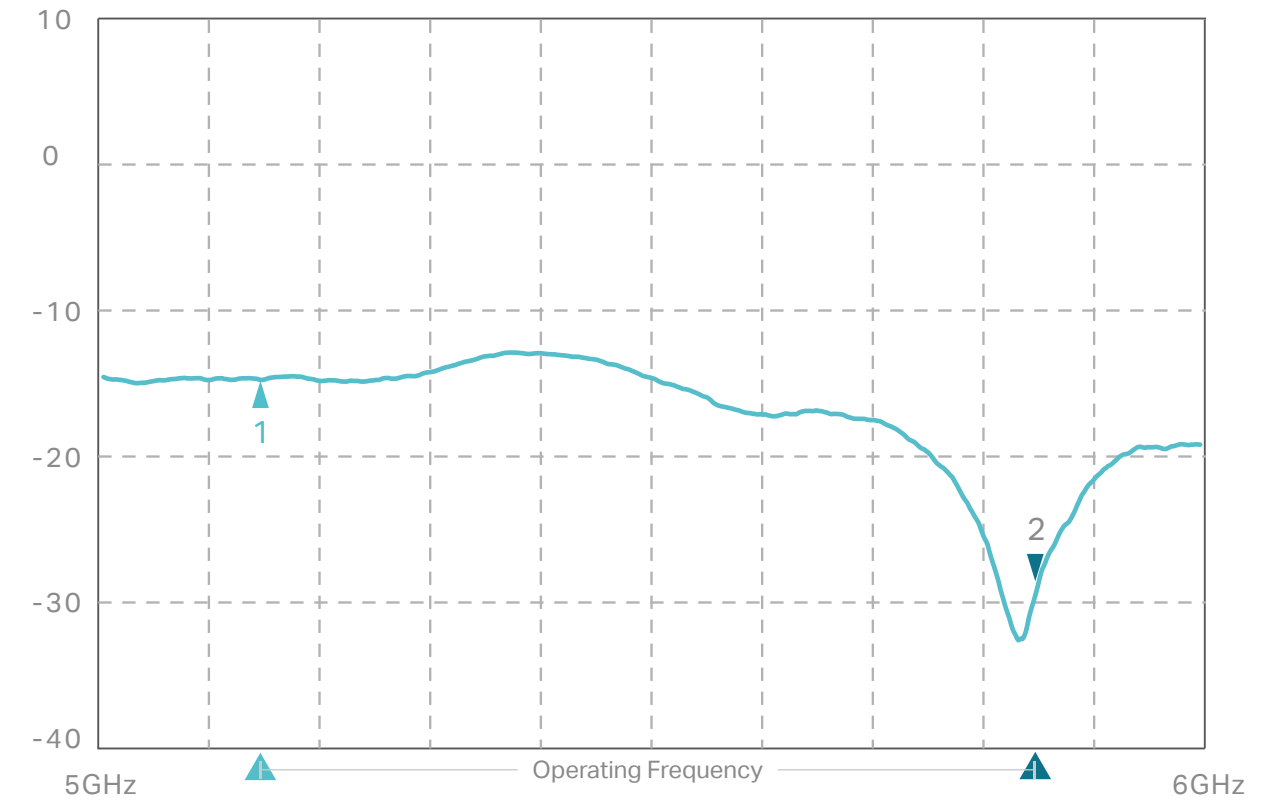
Vertical Azimuth



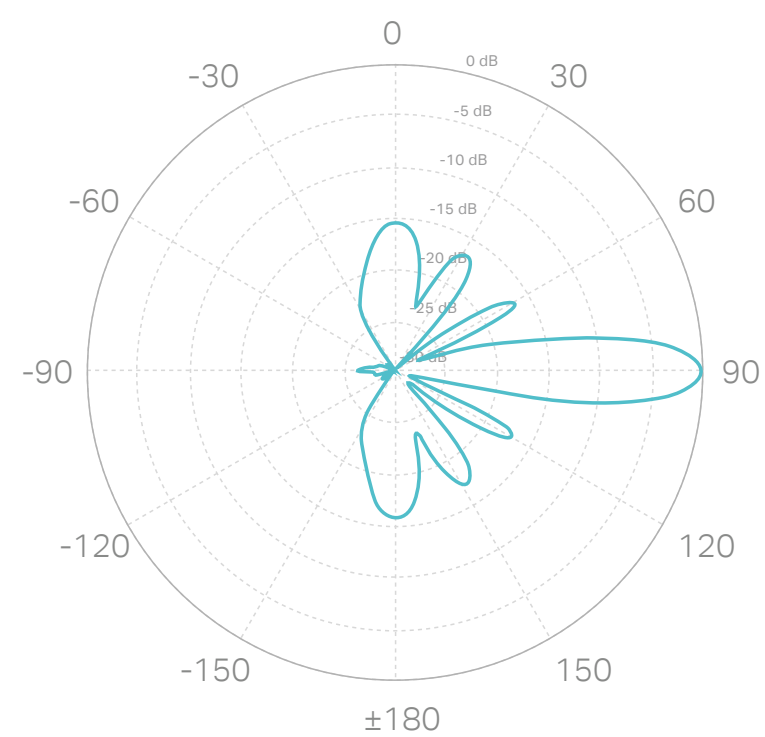
Vertical Elevation



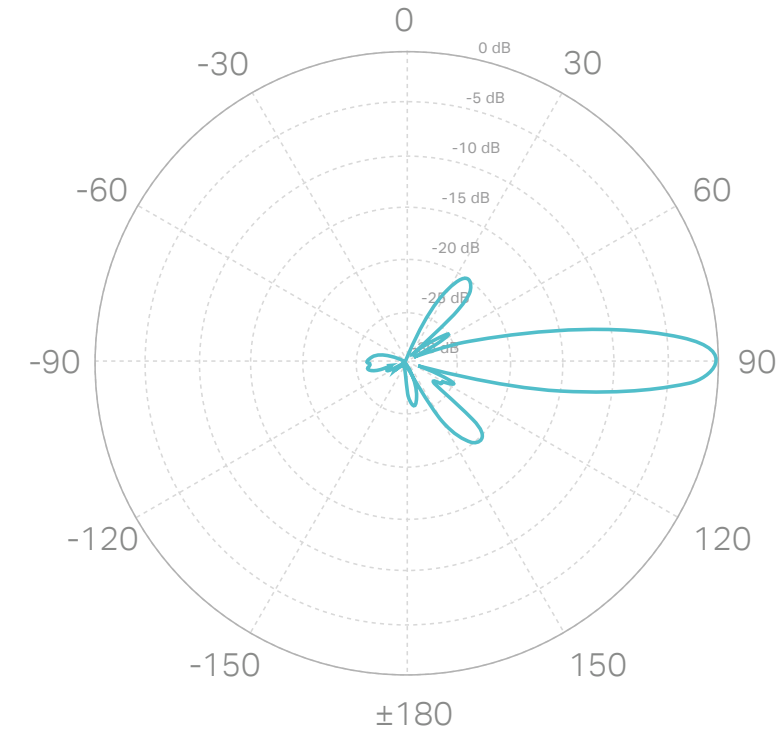
Return Loss – Vertical Polarization



Horizontal Azimuth



Horizontal Elevation



Return Loss – Horizontal Polarization

